

REMARKS

Claims 1-6, 16, 17, 21, 22, and 32-39 are pending. Favorable reconsideration in light of the amendments and remarks which follow is respectfully requested.

1. Claim Objections

Claim 39 is objected to under 37 CFR 1.75(b) as not further limiting the subject matter of a previous claim. Applicants respectfully disagree.

Claim 38, from which claim 39 depends recites a gas-fired stove, oven, clothes dryer or water-heater. Claim 39 recites a gas-fired stove, oven, or water-heater. Thus, claim 39 further limits claim 38 because it does not recite a clothes dryer and, as such, excludes this element from the claim.

2. Double Patenting

Claims 38 and 39 have been objected to under 37 CFR 1.75 as being a substantial duplicate of claims 32-34 respectively.

Applicants respectfully submit that claims 38 and 39 are further limiting of claims 32-34 in that claims 38 and 39 recite that the electric resistance ceramic igniter is a sintered ceramic igniter, which is not recited in claims 32-34. Thus, it is submitted that Applicants' claims 38 and 39 provide different claim scope than claims 32-34 and, as such, these claims should not be objected to as presenting duplicate claim matter.

In view thereof, reconsideration and withdrawal of the objection is respectfully requested.

3. 35 U.S.C. §103 Rejections

Claims 1-6, 16, 17, 21, 22, 32-35, 38, and 39 are rejected under 35 U.S.C. §103(a) over US 3,589,846 (Place), EP 000385910B1 (EP '910), US 5,660,043 (Pfefferle et al), US 5,899,684 (McCoy et al), US 5,206,484 (Issartel), and US 4,106,889 (Katchka). Applicants respectfully traverse.

As acknowledged by the Office, Place fails to teach or suggest a gas control system having a control device configured and arranged so that following successful ignition of the gas, the electric resistance igniter is controlled in such a way that it can be re-heated so as to re-ignite the gas within a re-ignition time period of about 6 second or less. The Office further acknowledges that Place does not teach or suggest the use of a micro-controller.

EP '910 is cited for allegedly describing the use of a micro-controller in connection with an electric resistance igniter. Without agreeing with this allegation, Applicants note that EP '910 does not remedy the above-noted deficiencies in Place with respect to re-ignition.

Pfefferle is cited for allegedly describing "near instantaneous relight". Applicants note that Pfefferle describes an assembly for ignition of aircraft gas turbine combustors. According to Pfefferle, the heating element is heated to a temperature above ignition temperature for ignition, and after light-off the electrical heating is typically discontinued, but continued controlled heating can be used to provide "near instantaneous relight". No time periods are at all mentioned in connection with this "near instantaneous relight" terminology.

McCoy is cited as allegedly describing a fast re-ignition period of less than 6 seconds. In particular, the Office asserts that the "less than 6 second" re-ignition period is described as follows: "if the flame is not detected in less than one second after the igniter is de-energized" (see page 10 of the Office action). Applicants respectfully disagree and submit that this relied-upon time period is a flame test period. As set out by McCoy with respect to the detection of a flame within one second:

At that time, a third time constant circuit either maintains the fan blower motor in its energized state, if a flame of sufficient magnitude and frequency is detected, or de-energizes the blower motor, if the flame is not detected in less than one second after the ignitor is de-energized. (Abstract)

...includes a trial ignition period during which... provides

both air and fuel to the combustion chamber. If a flame is not detected in less than one second, the device is de-energized and a starting must be retried. (col. 1, lines 23-25)

Thus the third embodiment of the present invention provides numerous advantages over the prior art... it has... a subsequent flame test in which, if no flame is apparent, the system shuts down by removing not only the voltage to the igniter assembly but also to the fan blower assembly that stops the air and fuel from being provided to the combustion chamber." (col. 5, lines 41-49)

Thus, clearly this description by McCoy refers to a flame test period, wherein a flame is either detected or not detected within one second. If the flame is not detected, then the device is subsequently de-energized and then restarted. Nowhere does McCoy teach or suggest a system wherein, after successful ignition, the igniter is controlled at a temperature less than the gas ignition temperature but above room temperature and so the igniter can be re-heated so as to re-ignite the gas within a re-ignition time period of about 6 second or less.

In rejecting the claims, the Office asserts that it would have been obvious to operate Place in a manner which would permit near instantaneous relight, that is, less than six seconds (page 11 of the Office Action). Applicants disagree

The control system of Place is one that is designed to prevent the possibility of explosion. In particular, Place describes a system with automatic recycling in the event combustion is not properly initiated or is terminated for any reason (see col. 2, lines 34-41). As set out,

For normal ignition when the dryer is first started from a cool condition, ignition occurs about 30 seconds after line voltage is supplied to the igniter and fuel control system 48. However, recycling when ignition fails to occur or after combustion is terminated is usually about 60 seconds since cooling must occur before the switch 58 can reclose and the igniter must then again heat to the necessary temperature to cause opening of the switch 58. (col. 6, lines 18-25)

Thus, Place specifically describes a system wherein after ignition, if combustion is

terminated prematurely, recycling automatically occurs and the igniter cools, followed by re-ignition. As set out, such a recycling, cooling, and re-ignition process requires time and takes typically 60 seconds.

Contrary to the Office's assertion, one of skill in the art would not operate Place in a manner that would provide "near instantaneous relight". As set out, Place is specifically designed so as to provide an automatic recycling, cooling, re-ignition process that requires extended periods of time. The proposed combination and modification of Place in view of Pfefferle would impermissibly change the principal of operation of Place and, as such, is improper. *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959); MPEP §2143.01. Applicants further note that nowhere does Pfefferle at all define what is meant by "near instantaneous relight", and nowhere does Pfefferle teach or suggest re-ignition within a time period of six seconds. Applicants further maintain that one of skill on the art would not have looked to an aircraft turbine design for modification of a clothes dryer system.

In view thereof, claims 1, 6, and 38 are patentable over Place, EP '910, Pfefferle, and McCoy. Claims 2-5, 16, 17, 21, 22, 32-35, and 39 depend from claims 1, 6, and 38 and, thus, also are patentable over Place, EP '910, Pfefferle, and McCoy. Reconsideration and withdrawal of the rejection is respectfully requested.

Claims 36 and 37 are rejected under 35 U.S.C. §103(a) over Place, EP '910, Pfefferle, and McCoy, and further over US 4,428,661 (Esper), US 5,233,155 (Maeda), or US 4,762,982 (Ohno). Applicants respectfully traverse.

As set forth above, Place, EP '910, Pfefferle, and McCoy fail to teach or suggest Applicants' gas control system as recited in independent claims 1, 6, and 38. Esper, Maeda, and Ohno are cited for allegedly describing sintered ceramic electric resistance ignition elements for use in various combustion and heating apparatuses. However, none of these references remedy the above-noted deficiencies in Place, EP '910, Pfefferle, and McCoy. As such claims 1, 6, and 38 are patentable over Place, EP '910, Pfefferle, McCoy, Esper, Maeda, and Ohno. Claims 36 and 37 depend from claims 1

and 6 and, thus, also are patentable over Place, EP '910, Pfefferle, McCoy, Esper, Maeda, and Ohno. Reconsideration and withdrawal of the rejection is respectfully requested.

CONCLUSION

It is respectfully submitted that the subject application is in a condition for allowance. Early and favorable action is requested. If for any reason a fee is required, a fee paid is inadequate or credit is owed for any excess fee paid, you are hereby authorized and requested to charge Deposit Account No. 04-1105.

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